

# SCSE MDP Group 9

SCSE Multi Disciplinary Projects

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## Introduction

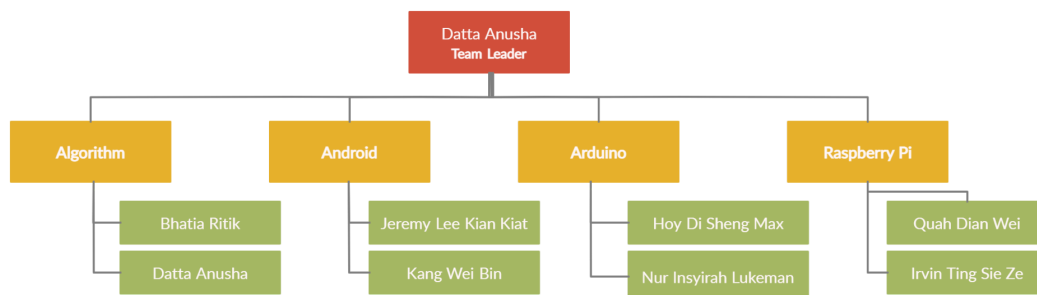
### Project Objectives

The 3 main task objectives are as follows:

1. **Fastest Path Task (Week 8)** – Find and navigate the shortest path from the start to the end goal zone. The robot must pass through the Fastest Path Waypoint (FPW) by fully covering the FPW sticker on the maze.
2. **Image Recognition Task (Week 9)** – Identify the images placed on obstacles throughout the maze within 6 minutes. The *image id*, *x* and *y* coordinates on the obstacles must be determined. The Android should display the *id* of images on the map and images should be identified accurately with a bounding box.
3. **Exploration Task (Week 10)** – The robot should travel to explore an unknown area from start to goal zone and back to the starting point within 6 minutes.

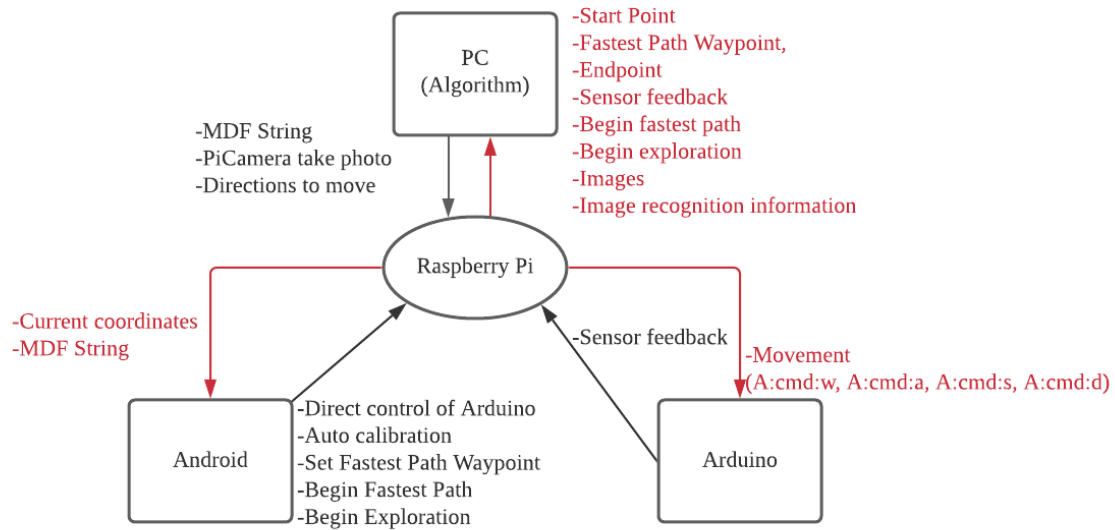
### Our Team

Our MDP team is split into 4 main subgroups, namely Android, Algorithm, Arduino and Raspberry Pi. The team structure is organized in the chart shown below:



### System Architecture

## High-Level Architectural Design (Data Flow Diagram)



## Low-Level Architectural Design (Call and Return Architecture)

